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Clinical Aspects of "Grass Staggers"—Milk Fever Syndrome*

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INTRODUCTION.—An attempt is made in this paper to put forward my views as to the nature of "grass staggers." There is a wide diversity of opinion in both the lay and professional world as to what constitutes a "grass staggers" case. If this clarifies the position at all its purpose will be accomplished.

I apologise for the lack of scientific data. The context is based on observations made in the field checked in many cases by simple chemical tests of which the most important was a modification of Rothera's test. Last season the Animal Research Division of the Department of Agriculture went to considerable trouble to arrange for blood, urine, milk and bowel content analysis of "grass staggers" cases, but owing to an unfortunate shortage of staff I was unable to take advantage of their offer. I hope that it will be possible to do so in the future.

DEFINITION OF "GRASS STAGGERS"

My experience has been that the following types of cases are considered as "grass staggers":—

1. Cows found dead in the paddock with few or no premonitory symptoms. An excessive excitability may be noticed for a few days previously. There is usually evidence of violent struggling before death. They may be in good condition.
2. Cows calved from one to five days which show milk fever symptoms plus nervous irritability. The response to milk fever treatment is from fair to nil.
3. Cows calved more than five days which may or may not be down. Those still on their feet go off their milk, have a tendency towards a high stepping gait, the eye is staring, the eyelids twitch excessively and there is a general increase in excitability.

The tendency to go down suddenly is greatly increased by exercise and exertion. When down there is intermittent and violent thrashing of the legs. The head is thrown back to the limit. The eye is grossly staring and the third eyelid exposed. Such cows may throw several such fits or die in the first. Death takes place in from a few minutes to several days. A few recover naturally.

THE OCCURRENCE AND NATURE OF "GRASS STAGGERS"

For convenience I discuss Class 1 first and separately. This type of complaint is not common in dairy cattle in the Waikato. It is common in beef cattle, especially in beef cows which have recently calved.

I identify this complaint with that known as grass tetany. Grass tetany is considered to be a manifestation of a low blood magnesium level. I understand that cattle in the Waikato have a low blood Mg level as compared with other parts of New Zealand. (Private correspondence Dr. I. J. Cunningham.) Presumably there is an accentuation of this low level in such cases. Rapidity of onset may vary with the rate of Mg depression.

This complaint occurs later in the spring, when there is a rapid growth of grass. It is the very first growth which appears to be the precipitant feed, representing one of the reasons for higher prevalence in beef cattle. Here grass is kept very short by the sheep. On dairy cattle country grazing is never so close. The excessive amount of, or peculiar nature of the proteins in this grass may be a cause of the suddenly lowered magnesium. Or there may be other substances in it which reduce magnesium levels. Again the specific dynamic action of proteins may have an effect through its acceleration of metabolic rates.

Taking Classes 2 and 3 together, I find that where there is a high incidence of Class 2 there is a high incidence of Class 3, and incidentally a high incidence of digestive acetonaemia. On the other hand, when there is little complicated milk fever there is little of Class 3 and acetonaemia.

The conditions under which Classes 2 and 3 occur are quite well defined. They occur where cows either by intent or otherwise are falling off in condition. In most seasons uncomplicated milk fever is the rule in May and June, Classes 2 and 3 are common in July, August and early September. From then on milk fever tends towards the uncomplicated Class 3 and acetonaemia cases cease to occur.

The difference in incidence from herd to herd varies as do feed conditions. In naturally high producing cows "grass staggers," Classes 2 and 3, occurs when there is a sudden decrease in the amount of digestible intake. Shortage of grazing, poor quality hay and ensilage, insufficient hay, ensilage, roots and other supplements all lead to a falling away in condition of the cow. The better the condition of the cow in the first instance the greater the likelihood of the onset of "grass staggers" when she is subjected to short commons. Hence the greater incidence of "grass staggers" when a mild autumn is followed by a severe winter and a late spring. Another factor which plays a part is temperature. The incidence of "grass staggers" (Classes 2 and 3) is greatly increased after a short period of cold wet weather. The explanation is that the cow requires more feed to keep her warm and she usually feeds for a shorter period on squally days. Another factor in this case is the extra energy (therefore food) required to plough up and down muddy races. The precipitant effect of this form of unnecessary exercise is only too well recognised by veterinary surgeons who have to treat so many of these cases in such unfavourable places. Another point of interest is that mouldy and musty hay, as well as burnt ensilage, seem to be associated with a high incidence of Classes 2 and 3. This may be due to some peculiar property of these feeds apart from their low digestibility and feed value.

As with "grass staggers" (Class 1) very freshly grown grass acts as another precipitant to Classes 2 and 3. Many cows develop the complaint without this precipitant.

CAUSE OF "GRASS STAGGERS"

The cause of Class 1 has been discussed to the best extent of my knowledge.

In Class 2 we have milk fever, a general low Mg blood level and conditions conducive to the production of acetonaemia. I believe that the important factor is the acetonaemia in that where it is absent seldom does the complication of low Mg level play any clinical part.

In Class 3 we have acetonaemia superimposed upon the low blood Mg level. This condition is clinically identical with that complaint described as acetonaemia of the nervous type. I believe it to be the same condition.

RELATIVE IMPORTANCE OF THESE COMPLAINTS

Over the last four years I have calculated from some 3,000 cases of metabolic disturbance I have personally attended that for every 100 simple milk fever cases there are:—

90 complicated milk fever cases (Class 2),
180 cases of digestive acetonaemia,
50 cases of nervous acetonaemia (Class 3),
8 milk fever type of acetonaemia,
2 grass tetany (Class 1).

TREATMENT

In the treatment of grass tetany I have had little experience. I have found that magnesium salts subcutaneously in large doses (½ lb. of salt) are effective in the early stages. In the violent stage, which is the most commonly seen, intravenous use of magnesium salts in doses regulated by heart activity and muscular relaxation will effect an immediate cure. The dose of the salt required varies with each case from ½ to 8 oz. The repeated drenching of such cattle for several days with magnesium salts is necessary to ward off recurrences; ¼ lb. doses are required.

Other sedatives such as chloral hydrate will, in some cases, relieve the spasms but the cure is much less effective.

Class 2. During periods when this type of "grass staggers" is common all milk fever cows are treated with suspicion excepting those which have calved 24 hours. I have not yet seen a complicated milk fever develop in a cow calved less than 24 hours. It is probable that the added effect of lactation on sugar requirements and possibly mineral requirements does not operate till after this period of time.

*Presented to the 20th Annual General Meeting of the New Zealand Veterinary Association (Division, N.V.M.A.) held at Wellington, June 2nd-4th, 1943.

In the suspect cases careful examination of the type and rate of heart beat is made. In a simple milk fever the rate is rapid and the sound weak; in complicated cases the beat is rapid and irritable. In the former inject calcium gluconate until such time as the rate is about 60 to 70 per minute and the beat full and regular.

In the latter if calcium alone is injected the beat will become slower, about 90 to 100 per minute, but irregular and irritable. If calcium is injected further the heart rate will rapidly rise until it reaches the 200 mark and then ceases. If the case is a desperate one I inject a little calcium to strengthen the beat and then magnesium till such time as the beat is very soft. Then more calcium is injected until the beat is slow (60 to 70) and full but not irritable. Results show that it is better to leave the beat on the depressed side rather than the irritable. In stubborn cases it is better to go to the limit of depression.

Where the case is less desperate I inject the magnesium first and then follow with the calcium.

It is probable that many of these cases could be satisfactorily treated with calcium and magnesium salts mixed together but it has been difficult to get magnesium salts other than the sulphate for general use. I doubt whether such treatment will give the same degree of success.

In all these (Class 2) cases the final results are poor unless the treatment is followed up by bi-daily doses of carbohydrates. Unless this is done many will fade away and die. Some will never even get up.

Intravenous use of glucose D is much less effective than bi-daily drenching with molasses or with starch and Epsom salts.

Class 3. In treating Class 3 I aim at the reduction of the nervous symptoms first and then treat the case as an acetonaemia.

Subcutaneous injections of magnesium give unreliable results.

Intravenous injections will effect a cure in almost all cases so long as it is done efficiently.

In cases which are still standing I inject magnesium sulphate intravenously until two or all of the following occur:—

(1) Great increase in rate of swallowing—60 p.m.

(2) Urination.

(3) Twitching of the muscles, particularly the eye muscles, ceases.

(4) Respiration becomes rapid and easy.

(5) The beast collapses.

In the case of (5) it is necessary immediately to prepare oneself to give calcium in the event of cessation of the heart beat. The further one goes with the treatment without causing death the better the final result. In many cases this treatment is sufficient if followed bi-daily with carbohydrate (molasses 2 lb., starch ½ lb.) plus 2 to 4 oz. Epsom salts for one week after all symptoms have ceased. In a few cases a second and occasionally a third injection of the magnesium is required. When the cow is down magnesium is injected intravenously until such time as the heart rate is reduced to the 60 to 70 rate and is almost imperceptible. (N.B.—In these cases the heart beat prior to treatment is very fast, 120 to 180, and irritable). Care must be taken not to cause a complete cessation of heart beat, but unless the extreme limit is gone the results are poor. Note is also taken of respiration and muscular tone. During injection the respiration changes from a fast, difficult, gasping breathing to an easy, rapid breathing. A sign of the end point is a sudden acceleration of breathing and tendency to breathe through the mouth. Muscle tone gradually decreases until the limbs are quite limp.

When this stage is reached the cow is left on her side and undisturbed. She gradually comes round and is usually up within three hours.

If the process has gone too far the immediate use of a little calcium gluconate (2 oz. of 20 per cent.) along with artificial respiration will save the cow's life. The follow-up treatment is as with the cows treated standing.

Other drugs, in particular chloral hydrate, both intravenously and orally, have been tried but only to a limited extent. The results were not very favourable.

Prevention

The prevention of Class 1 depends on the avoidance of grazing (where possible) on the quickly growing grass and on the supply of sufficient magnesium salts by way of the drinking water, in hay, or in molasses.

The prevention of Classes 2 and 3 is entirely dependent upon providing sufficient suitable well-balanced feed. Good hay and ensilage, an abundance of root crops and molasses, will prevent both of these and the digestive and milk fever types of acetonaemia.

Where hay and ensilage is in short supply or of poor quality and roots are unavailable molasses is the best substitute. The feeding of other carbohydrate concentrates is the only alternative in their absence.

Discussion

Mr. M. C. Armstrong: In opening a discussion on this important subject, I wish first of all to congratulate Mr. Blakely on his paper which is clearly based on the successful achievements of a considerable amount of practical experience. In essentials it agrees with my investigations in the Wairarapa, the results of which stimulated me last year to present a paper on ketosis or acetonaemia to the N.Z. Society of Animal Production.

Most of us know what constitutes a "grass staggers" case, but can we see through that very loosely applied general term and make a sufficiently accurate diagnosis that will lead to successful treatment and prevention in each particular case.

I fully endorse Mr. Blakely's views that the use of a simple modification of Rothera's test for acetone products in urine or milk is a valuable, if not essential, aid in the field for correct diagnosis of "grass staggers" and obstinate milk fever cases.

He has defined "grass staggers" for convenience of discussion into three classes.

I agree that Class 1, or what is commonly called acute "grass staggers," is identical with grass tetany and it appears that magnesium is the chief factor since the recovery due to Mg alone in cases amenable to treatment is quite definite. Nevertheless, I have found the Mg analysis of blood rather deceptive.

The conditions under which I have investigated grass tetany are: (1) Cows recently calved having unlimited access to green feed oats after coming from bare winter pasture; (2) on properties where it is the practice to shift cows on the verge of calving from hill country grazing to rich diary flats carrying a green spell of growth. Under these conditions several cows are affected to a severe extent within a few days and the mortality is usually high. The obvious preventive measure is the avoidance of the sudden change in feed, or forcing a greater use of supplements.

Mr. Blakely's Class 2 seems to coincide with the comatose or milk fever syndrome of acetonaemia and includes those cases of acetonaemia which are associated with both a low Ca and a low Mg.

Immediate treatment, which consists of a correction of these minerals, must be followed by an anti-acetonaemia course of carbohydrate therapy for several days. I agree with Mr. Blakely that the acetonaemia is the important factor.

Discussing Class 3 with its spectacular nervous symptoms, I agree that here we have the nervous syndrome of acetonaemia although it is reasonable for me to assume that the low blood Mg is superimposed upon the acetonaemia rather than the reverse.

In the treatment of these cases the intravenous injection of Mg is indicated to start with.

Personally, I have had good success by using intravenous injections of chloral hydrate in sufficient dosage to control the violent symptoms and, by following this with the administration of $MgSO_4$ and molasses by stomach tube or drench, I consider this a safe and efficient technique.

It is easily understood that Classes 2 and 3 staggers as well as digestive acetonaemia have a correlating degree of incidence because they all hinge on the main underlying diseased state of acetonaemia.

These staggers cases are, therefore, most common in high producers under conditions which result in a depletion of carbohydrate reserves—cows falling in condition, producing off their backs, or those subject to continued cold weather, metritis, retained placenta, etc.

The figures given are interesting as they show that of the after-calving metabolic disturbances attended in his district the various types of acetonaemia account for 76 per cent., simple milk fever for 23 per cent., and grass tetany for 0·5 per cent.

The prevention of Classes 2 and 3 staggers is essentially the prevention of acetonaemia and here lies the importance of adequate amounts of carbohydrates such as good hay, molasses, mangels or sugar beet for the ante- and post-natal period. I am interested in sugar beet as this appears to be the best equipped root supplement for the job, if molasses is in short supply.

Recently in U.S.A. there came evidence that the severity of acetonaemia cases follows more closely the degree of hypoglycaemia rather than the degree of blood ketones. Thus laboratory estimations of blood sugar as well as Ca and Mg may yield valuable information if applied to the clinical history.

In conclusion, I would like to hear opinions regarding the usefulness of the intravenous glucose therapy which has been highly rated as a treatment for acetonaemia in the U.S.A.

Mr. McDonald: Of 73 cases of milk fever, 35 showed symptoms of hypomagnesaemia. These had calved 36–48 hours. He asked whether calcium absorption from the gut was normal in milk fever.

Mr. Webster gave a warning regarding the use of the nitroprusside test on urine. He said that observations at Massey College had shown that 33 per cent. of normal cows gave positive reactions. All cows gave positive reactions just before and after calving.

Mr. Leslie: No mention had been made of cows which failed to respond to treatment. Some cows which he referred to as "sitters" failed to recover no matter what treatment was adopted.

Dr. Cunningham congratulated Mr. Blakely on his rational treatment of the disease. It had been shown in "grass staggers" herds that the blood magnesium of normal cows may be almost as low as in affected animals. In "grass staggers" magnesium was always low. It might remain low for some months.

Dr. Siegel: In his district there was much milk fever, and acidosis, but little "grass staggers." Pampas grass appeared to check the development of milk fever.

Mr. Swan asked had Mr. Blakely tried vitamin B_1 in treatment. Recent literature on B_1 therapy showed its usefulness in treatment of various human and animal pregnancy diseases and various types of muscular dysfunction and nervous conditions, *e.g.*, Chastek paralysis in foxes, "acetonaemia" in cattle, hyperemesis gravidarum, gravidity toxicosis, diseases associated with increased metabolic requirements, rheumatic conditions and diseases with muscular insufficiency and neuritis.

"Grass staggers" might be secondary to any metabolic disturbance which produced disturbance in carbohydrate metabolism, with which we knew B_1 was associated.

Large doses of B_1, *e.g.*, 20 mg., intravenously in cattle, had been claimed to produce recovery from acetonaemia.

Mr. James: He also had experience of refractory cases. He wondered whether there was possibly any connection between oestral disturbances in cattle and "grass staggers."

Mr. Blakely, in reply, said that he thought chloral hydrate gave good results but had found a tendency to the recurrence of symptoms after using it. In reply to Mr. Webster, Rothera's test was carried out on milk and not on urine. In reply to Mr. Leslie, he said he used to get more "sitters" than at present and he suggested that this was probably due to indiscriminate dosing with calcium gluconate. If a case failed to respond to calcium-magnesium treatment, therapy should be pushed to the limit. "Sitters" were frequently found to be suffering from other diseases than milk fever such as tumours or tuberculosis. He asked Dr. Cunningham whether he had magnesium levels of blood from affected beef cattle. In reply to Mr. Swan, he had tried vitamin B but had not obtained favourable results.

Weekly Wisdom

"*Work ever and to each will come that measure of success for which Nature has designed him.*"—Avicenna, A.D. 980-1036.

Veterinary Education in Great Britain

Second Report of the Loveday Committee

(*Continued from page* 170)

CHAPTER III: UNIVERSITIES AND VETERINARY EDUCATION

13. In our 1938 Report we argued that it is of the first importance to bring veterinary education into close connection with universities, and we are now recommending that the new schools needed be not isolated institutions but integral parts of universities. Students would then be brought into intimate contact with fellow-students having other interests; they would receive the best instruction in the basic sciences; veterinary teachers would benefit, especially in their researches, from the stimulus of frequent contacts with workers in allied sciences, while control of the type exercised in universities would be beneficial alike to the staff and to scientific progress.

14. We previously recommended that veterinary students at universities should be able to take a degree in science at the end of their third year which would exempt them from the corresponding examinations of the R.C.V.S. This plan would have gone some way towards making veterinary studies a branch of university education, and would have relieved the student of a part of the burden and cost of preparing for two sets of examinations simultaneously. We need not here discuss the criticisms that were directed against this proposal, for the position is now very different, firstly because the profession is to become much more numerous, so that additional schools are necessary; and, secondly, because we are explicitly asked to recommend the best possible training for veterinary surgeons. We are convinced that the best training can be secured only by persuading universities to undertake responsibility for that training. Nothing short of this will give veterinary education the standing and the opportunities for development which the increased and still increasing importance of the profession to the national economy deserves and requires. Our ideal is that all veterinary schools be in the same sense parts of universities as are most medical schools. This is already so at Liverpool; it would be so under our proposals at Cambridge, Glasgow and Bristol. The charter of the Royal Veterinary College makes it possible at London, and we understand that the University of London would not be adverse in principle to the advancement of that College to the status of a School of the University. The position at Edinburgh is exceptional, but the influence of the University upon the policy and management of the Royal (Dick) College is, in fact, great.

15. But the establishment of new university schools will not be possible if students must be prepared for external examinations. The University authorities at Cambridge, Glasgow and Bristol will not be prepared to assume responsibility for veterinary studies unless their students are reading for veterinary degrees and are not obliged to prepare simultaneously for other examinations. Such an attitude seems to us entirely reasonable and in the best interests of the students. Veterinary studies must therefore be given full university status, a degree becoming a registrable qualification; and we recommend that steps be taken to this end. This indeed is in some ways the central recommendation of our Report, and to it we attach the highest importance, for if a university degree be not regarded as a registrable qualification the association of these universities with veterinary education cannot be obtained.

16. The training of a veterinarian is, however, like that of a medical man, a training in an art as well as in science, and if degrees in veterinary science or veterinary medicine (by whichever name they may be called)* are to be registrable qualifications to practise, the veterinary surgeon's clients need to be assured both that his education in theory has been an adequate basis for his technique, and that he has been well trained in diagnosis and in the practical work of surgery and obstetrics and of preventive and curative medicine. As in human medicine, there needs to be an assurance of a sufficient minimum standard of training in all the schools, though this should not prevent the schools from variation and experiment and improvement of education above that minimum. At present the R.C.V.S., through examinations which its Council conducts, strives to maintain such a minimum standard. We propose that the Council, altered in constitution but with enlarged duties, should continue to perform this function.

(*To be continued*)

* We suggest that a degree which leads to qualification to practise should uniformly be termed a degree in veterinary medicine.

An Essex boar was sold at Chelmsford recently at 500 gns., regarded as a record price for a pig of any breed.

THE VETERINARY RECORD

May 27th, 1944

THE LOVEDAY REPORT (2)

IT is probable that that section of the second report of the Loveday Committee headed "Universities and Veterinary Education" is the one which will arouse the greatest interest in the profession, and indeed contains "in some ways the central recommendation of our report."

The crux of the chapter is, in short, the recommendation that certain universities shall be entitled to grant registrable degrees. To many this would spell the death-knell of the one-portal system as we have always understood it.

Will this indeed be the case, or will the additional scope of the R.C.V.S. referred to in later chapters offset its change of status as the only examining body? Will this step entail loss of uniformity or will there be some advantage in having a varied scheme of training which allows some teaching institutions to exceed the minimum standard? Whilst it may be true that the holders of a university degree will be in a better position to sit for the higher academic degrees, it may be that the present system of sitting for two sets of examinations more or less simultaneously is satisfactory. Has the rigid one-portal system served its purpose of welding us into a unified profession and is some wider scheme of veterinary education necessary to fit us for the work that awaits us in the wider field of veterinary medicine which is of such increasing importance in the national economy? If so, will greater co-operation with universities achieve these objects? Should the universities be allowed to grant registrable degrees, very careful safeguards are essential to prevent any lowering of minimum standards.

It is only when such fundamental questions as these are answered fully that the profession can voice its final and fully considered opinion on the findings of the Committee.

BIOLOGICAL STANDARDS

"Advances in what are known as 'biological products' have usually been dependent upon the development of accurate methods of biological assay by which the potency of different extracts and concentrates can be measured within the fairly narrow limits of experimental error," writes "Onlooker" in the *Pharmaceutical Journal*, and continues: "The services rendered by the keeper of biological standards thus extend far beyond the immediate control of the activity of commercial preparations of serums, hormones, vitamins and kindred substances although this in itself is an important service; these international standards provide a basis upon which the results of different groups of research workers can be compared and from which the isolation of hormones, vitamins and other active principles can be expected to develop. On the more strictly pharmaceutical side, commercial development is often ahead of official recognition. There is inevitably a period during which manufacturers are left to their own judgment to devise standards or 'units' by which to denote the potency of their own preparation. It is during this time, when there is no international standard, that the confusion resulting from different units—rabbit, cat, dog or what-not—is rampant. Manufacturers are not slow to appreciate the advantages of the international standards when these become available. What is needed is an earlier control from official sources. Is it not possible to impose provisional standards for important new drugs at a much earlier time than is now our practice, such standards to be confirmed or replaced as our knowledge of the drugs extends? Liver extract, parathyroid hormone and extract of suprarenal cortex are three examples of preparations well established in clinical usage for which I do not think there are yet any international standards of reference."

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The first direct evidence that thiamin or vitamin B_1 can be synthesised in the human—an activity heretofore ascribed to ruminants and the rat—has been presented by investigators at John Hopkins University.—*N. Amer. Vet.*

CLINICAL COMMUNICATION

Preliminary Clinical Report on Vivicillin

EDGAR VON LUSTIG-LÈNDVA, M.A., M.R.C.V.S.

This is a preliminary report on the results achieved in clinical tests mainly in small animals with a standardised antibacterial pyrogen-free metabolite preparation containing living *Penicillium notatum* Fleming. The preparation is being produced in two forms, one for external application named "Pennotin" ("PT") and one for parenteral application called "Vivicillin" ("PC").

The first trials, extending over a period of four months and comprising approximately a hundred cases, were made in private practice with the full knowledge and consent of each owner. No claim is made that these results are in any way conclusive. This report is made purely for the reason that, as Penicillin proper does not seem to be available for veterinary use, and as in these times any remedy which might save livestock is of primary importance, this preparation should be brought to the knowledge of the veterinary profession in order that by their co-operation its value may be correctly assessed.

After the establishment of non-toxicity by tests on mice and guinea-pigs, feverish conditions of known and unknown origin in small animals were treated with "PC". It appears that the minimum effective dosage is 1 c.c. per 20 lb. body weight and that the product is most efficient when used shortly after its preparation. Generally a drop in temperature of about two degrees occurred after three to six hours only to rise again in some cases after 36 to 48 hours. If, in the latter, a further injection was made, the same phenomenon occurred. In most cases two to three injections were sufficient to complete a cure. A few minutes after treatment about 60 per cent. of the animals showed slight evidence of pain: in a few individual cases the pain appeared to be severe. The remainder did not show any signs of discomfort. An interesting phenomenon occurred here: some of the animals, whilst mopy and depressed before the injection, began to play and started eating about four to six hours after the application of the drug. (A similar reaction was experienced in several human cases, a stage of absolute well-being being observed by the patients.)

As in cases where diarrhoea and/or vomiting had been present there was seemingly a cessation of both these symptoms after the injection, laboratory tests were made on the specific action of the drug on the coli group with positive results. In this respect, therefore, "PC" appears to be at variance with Penicillin proper. (Medical Research Council War Memorandum, No. 12, and *British Medical Journal*, April 15th, 1944.)

In cases of streptococcal infection, *i.e.*, pneumonia, rhinitis and the secondary invaders in canine distemper, the action of the drug was highly satisfactory. In cases of canine meningitis *quoad morbum*, no results have been achieved as yet. *Quoad vitam*, it appears that the animal may be kept alive in a comatose condition. This corresponds to results achieved in human cases with Penicillin proper as described in the *British Medical Journal*, April 15th, 1944.

A few cases may be recounted here for each of the groups of diseases treated:—

Case No. 1.—Alsatian dog aged 1½ years. Inoculated against distemper one year ago; developed diarrhoea, vomiting, highly injected mucous membranes, temperature 104°. Was treated with styptica. After slight initial results the animal returned after five days in a weaker condition with a complete relapse and was given 2 c.c. of "PC" intramuscularly. Brought in again after 48 hours, the animal was generally much improved; it had not vomited after the first injection of "PC", and the temperature was down to 102°. Again 2 c.c. of "PC" were given. After 48 hours the temperature was 103°, remaining so for 48 hours. Three c.c. of "PC" were given. Nine hours later the animal began to feed and behave normally; the temperature had dropped to normal and remained so.

Case No. 2.—Fox terrier bitch, previously treated for endocarditis. When called in again, a five-day-old pneumonia was diagnosed. The animal was injected with transpulmin and given sulphanilamide per os. After the second tablet the bitch started vomiting, the temperature rose to 105°, and her general condition was very bad. Two c.c. of "PC" were administered. Within six hours the temperature dropped to 102°, the sensorium became clear, and the animal took food which she retained. As after 48 hours the temperature had risen to 103°, the 2 c.c. dose of "PC" was repeated. From then onwards recovery was uninterrupted.

Case No. 3.—Cairn terrier dog, four years old. This subject had suffered for three years from interdigital abscesses. From the commencement of "PC" treatment, the owner reported improvement in the dog's general condition. Whilst, prior to the initiation of this treatment, a new cyst seemed to appear every second day, the frequency of appearance was diminished to once a week and a cyst either burst very rapidly or disappeared after 24 hours. By way of trial, the owner agreed to keep the dog under the influence of "PC" for a prolonged period. The animal received 63·5 c.c. over a period of 68 days. The highest individual dose was 4 c.c. intramuscularly. On the 68th day the dog went down with what appeared to be an anaphylactic shock. The animal was prostrate, refused food and suffered from acute dyspnoea. This state lasted for approximately twelve hours. At the seat of the injection induration could be felt and the regional lymph glands were painlessly enlarged; the temperature was normal. One remaining cyst healed badly, but for the last ten weeks no new cyst has appeared. This case naturally is, as yet, inconclusive.

Case No. 4.—Cat, nine months old, suffering from chronic enteritis and proctitis, with occasional vomiting. 2·5 c.c. of "PC" were administered. 48 hours later the stool was formed. Recovery was complete and uneventful.

As in many cases gastro-enteritic symptoms were apparently influenced by the product, an effort was made to influence the well-established syndrome of nephrosis in the dog. I may quote one case:—

Case No. 5.—Six-year-old Scottie bitch. Thirst, vomiting, albumen ++ in the urine. Five applications of "PC", each of 2·5 c.c., were given and the external symptoms disappeared after the first injection. The albumen content in the urine, however, was not affected. No recurrence of the symptoms has been seen after four weeks.

Case No. 6.—Serum horse, ten-year-old mare, immunised against coli. After an injection of coli bacilli and *pasteurella bipolaris septica*, she developed an oedematous swelling on chest and abdomen with acute malaise, and a temperature of 103·8°. One application of 30 c.c. of "PC" was given intramuscularly. Three hours later her temperature was 103° and she began to feed. After 24 hours the mare's temperature had dropped to 101°; she was weak but well on the way to recovery. After 48 hours her temperature was 100° and the swelling disappearing.

The foregoing represent a few cases where a beneficial action may, *post* or *propter hoc*, be attributable to "PC". I now give a list of cases where "PC" was the sole therapeutic agent.

Group	*Positive results*	*Negative results*
Gastro-enteritis	11	1
Pneumonia	5	0
General sepsis (including feline influenza) ...	4	1
Meningitis	0	3

In four cases so violent a reaction was produced that no further application of "PC" was made. The reaction appeared to be a paresis of the hindquarters which lasted from 12 to 24 hours.

Pennotin for external application is grown on a medium which, although unsuitable for the growth of ordinary pathogenic germs, allows the *Penicillium notatum* to grow freely. It is applied on the open, uncleaned wound in gauze packings. Of twelve cases so treated, seven were positive, two infected with anaerobic bacilli were negative and three were doubtful. As in Penicillin proper, the action of "PT" does not seem to be impaired by the debris, but with Pennotin, *surgical treatment, also, is essential.* No disinfectant should be used in conjunction with "PT". Two cases are of special interest:—

Case No. 1.—Pomeranian dog, 13 years old, with bad teeth. There was an abscess the size of a hen's egg, in the region of the left cervical lymph gland. The abscess was opened and plugged with "PT". The owner was told to return after 48 hours for changing of the bandage, but failed to do so until the third day. Contrary to all expectations the bandage was dry and did not smell. After removal of the bandage the abscess proved to have healed completely as if *per primam*.

Case No. 2.—Nine-months-old fox terrier, male, victim of a motor accident. The skin of the right forearm was torn off from the bend of the elbow to the claws. The animal was first bandaged with acriflavine emulsion; sulphonamides were given per os. After two days the wound was evil smelling and covered by pus and cell debris. The temperature was 103° and the animal was in great pain. Without interfering with the wound the arm was bandaged with "PT". After three days the bandage was changed, revealing two-thirds of the wound completely healed over and covered by skin, one deep furrow being covered with healthy granulation tissue. There was no pus and the wound was odourless. Five days later the remaining third of the wound appeared to all intents and purposes to have healed apart from a strip of two inches where a bandage had slipped and the animal had interfered with

the wound by licking. Recovery was uneventful and the dog is now using the leg quite freely.

At present trials are in progress in ophthalmic and aural diseases, as well as generally, by other members of the profession who kindly consented to try the product in their own practice.

Several hospitals are engaged on trials in the human subject. Reports on these cases will appear in due course, but one case which may be of special interest to the veterinary profession will be mentioned here:—

Case.—Pathologist, aged 47, contracted swine erysipelas from pure culture of high virulence on the third finger of the right hand. Sulphonamides were of no avail and the swelling threatened to spread over the whole hand. Two c.c. of "PC" were given intramuscularly and temperature and swelling disappeared after six to eight hours. Recovery was uneventful.

This case is again at variance with the reported action of Penicillin as the bacillus of swine erysipelas is a gram-negative organism.

I wish to re-emphasise my earlier statement, that this report is in no sense conclusive, representing as it does merely the findings of a private practitioner under uncontrolled conditions. "Vivicillin" seems to act in acute febrile conditions, on the secondary invaders in virus diseases and on the coli group. It seems useless in meningitis and in the haemorrhagic gastro-enteritis of greyhounds. The action in urinary diseases I cannot explain.

"Pennotin" seems beneficial in mixed infections of accidental wounds, and in several cases it appeared to promote healing.

There is, of course, a wide field left open for further investigation, especially in large animals which have not been dealt with at all as yet.

In conclusion, I gladly acknowledge my indebtedness to Dr. H. V. Enoch, who initiated this method of applying these Penicillium live cultures in veterinary surgery, and in collaboration with whom these trials were made.

I am authorised by Dr. Enoch to state here that he infinitely regrets the premature publicity given to Vivicillin in the public Press, without his knowledge.

ABSTRACT

[Effects of Environment upon the Free-living Stages of *Ostertagia circumcincta* (Stadelmann) Trichostrongylidae: I.—Laboratory Experiments. Furman, D. P. (1944.) *Amer. J. vet. Res.* **5**. 79.]

Ostertagia circumcincta causes great annual loss to Californian sheep farmers. From his study of the eggs and larvae of the species, done by carefully controlled methods for which the paper must be consulted, the author draws the following conclusions:—

The non-embryonated and embryonated eggs of *O. circumcincta* placed in water 5 mm. deep are killed in 1 to 2 days by a temperature of 45° C. In ice at −6° C. they live for 10 to 22 days. At temperatures in water above freezing point the rate of development increases with the temperature. Apparently 37° C. is above the optimum for survival of the eggs, but embryonated eggs resist this temperature successfully. Preinfective larvae are more quickly killed by freezing and high temperature than are the eggs. At 5° C. in shallow water they may survive for one to two months. The optimal temperature for development is 27° C.

Infective larvae are highly resistant to extremes of temperature, but they are killed within about two weeks by freezing in ice at −6° C. They can survive for more than 271 days in water 5 mm. deep at temperatures just above freezing. Above 0° C. the mortality increases with rising temperatures.

The following is the order of increasing resistance to desiccation: preinfective larvae, embryonated and non-embryonated eggs, infective larvae. Infective larvae can survive 43 days' exposure to a saturation deficiency of 19·8 mm. of mercury (=59 per cent. of relative humidity) at 27° C.

Vertical migration of infective larvae above the soil surface is apparently due to a negative geotropism, which is itself influenced by light intensity, moisture and temperature. Larvae in a glass tube one end of which was in a black box and the other illuminated on white paper did not show any phototropism.

Eggs in faeces buried to a depth of 12 inches in soil can complete development and the resulting infective larvae can migrate to the surface soil within a few days. The number of larvae developing is inversely proportional to the increasing heaviness of the soil. The infective larvae can migrate only through soil which is appreciably moist. *Ploughing of infested pasture must be considered inadequate* for ridding it of *O. circumcincta.* Lateral migration of infective larvae in the soil is limited to a radius of 1 to 2 inches.

G. L.

IN PARLIAMENT

Control of Conditions of Milk Production

On Friday of last week the second reading of the Food and Drugs (Milk and Dairies) Bill was moved by Mr. R. S. Hudson, Minister of Agriculture. There was a stiff fight on the proposal to transfer from the local authorities to the Minister powers to control the conditions of milk production and the issue was put to a division, the Government securing a majority of 103 (116 for, 13 against).

In moving, the Minister said the Bill was a measure to implement the promise contained in the White Paper issued last July to transfer to the Ministry of Agriculture, as soon as conditions permitted, certain functions of the local authorities in relation to milk production. Since the war began there had been a far greater recognition by the public of the value of milk as a human food; and the consumption of liquid milk had risen during the war from 860,000,000 gallons to 1,185,000,000 a year. Our supplies were insufficient and non-priority consumers were drastically rationed.

We must all hope that the day would come when that rationing would end. To achieve this we wanted an additional 350,000,000 gallons a year. That was a formidable task to set the British farmer, but he had no doubt that the livestock improvement schemes his department and the War Agricultural Executive Committees had in mind would achieve the target. But his ambition, and he was sure the ambition of all dairy farmers, went beyond the provision of more milk. The aim must be not only milk in greater quantity, but milk of steadily improving quality; milk in which the public and the medical profession could have complete faith. We must grade up the national dairy herds, and do everything in our means to encourage the adoption by dairy farmers of a sound breeding policy.

Hand in hand with this went the question of the improvement of the health of our dairy herds, together with the control of disease. For the first time every herd would be inspected at least once a year and as the number of veterinary surgeons increased he hoped that regular inspections would become more numerous. The presence of a veterinary surgeon on a farm at regular intervals was not only a valuable step towards the maintenance of the health of the herds, but gave the farmer an opportunity to discuss animal health problems and to get advice which often would prevent disease occurring. At the same time the various schemes for the control of diseases had been expanded. In addition, he hoped to introduce in the near future a voluntary scheme for the vaccination of calves at the time of official dairy herd inspections. The State would give financial assistance to enable a very low fee to be charged to the farmer.

Attested Herds Scheme

He had also decided to reopen at an early date the attested herds scheme to all classes of herds, but without bonus payments or financial assistance towards the cost of qualifying tests. This decision would not affect herd owners already in the scheme. It would apply not only to farmers selling milk but also those engaged in rearing stock. He hoped in this way gradually to build up areas in which cattle were free of tuberculosis and from which heifers would be available to replenish herds. The Ministry was also pressing on with the national milk testing and advisory scheme.

The functions it was proposed to transfer from the local authorities to his department—functions which even the local authorities admitted had not been carried out—comprised the inspection of premises to see that they conformed with the necessary sanitary conditions. They also included the inspection of methods of milk production to see that the milk produced was consistent with the prevention of disease and the maintenance of its cleanliness. It might be suggested that the Ministry could have achieved its object by bringing the backward local authorities up to the level of the best. But the whole problem had radically changed since 1926, when these powers were originally entrusted to the local authorities. Then there was no State veterinary service, and not the same idea of improving the quality of milk as a national policy. We were not then, as now, engaged in trying to grade up the whole machine. Then, supplies for the large towns were, for the most part, drawn from the surrounding country. There was no Milk Marketing Board.

The areas from which the supplies for the great towns were drawn were changing very quickly before the war, and those supplies now, for the most part, came from a distance, from farms 60 or 100 miles away. The local authorities of the great consuming towns had no authority over the conditions under which the milk was produced, and, for the most part, they and their medical officers of health did not even know the areas, let alone the individual farms, from which their milk came. He suggested, therefore, that these local authorities had nothing at all to fear from these proposals. Indeed, on balance, they ought to welcome them, because in future, instead of having an unknown person,

they would have a single known person—the Minister of Agriculture—to shoot at. (Laughter.) At present Parliament had no redress, the responsibility rested with the local authority, and no one at the centre had any power.

The Minister of Health and he would not fix the "appointed day" on which the Bill would come into force until they were satisfied that they were in a position to carry out the work.

The present proposals left to local authorities their special interests at the consumer stage. They did not touch, even on the farm, the local authority's responsibility for the health of the people concerned in producing milk, but they would continue to be responsible for keeping a check on the cleanliness and purity of milk sold in their area. That division of functions was logical and proper. He asked the House not to be swayed by any suggestion that this was an insidious attack on the functions and authority of local authorities. There was an overwhelming case for the co-ordination in the hands of one department of all the powers and duties relating to the production of clean and wholesome milk.

Rejection Moved

Mr. Turton moved an amendment declining a second reading to a measure that deprived local authorities of their existing responsibilities and centralised those responsibilities in the Minister of Agriculture, and urging deferment of legislation pending examination of the question by a Royal Commission. The main ground of his objection to the transference of functions was that the Ministry of Agriculture had insufficient staff to undertake them. He said that those who supported and those who opposed the Bill were like-minded in their desire to improve the quality and increase the quantity of milk. There was also unanimity of feeling that the present standard of cleanliness on the farm was not satisfactory. It was agreed that too many authorities dealt with the question of milk and that there was too wide a diversity of standards of cleanliness and of the structure of cow byres in the milk and dairy orders. The question on which they disagreed, and which was the issue on the Bill, was whether those functions should be carried out by the Minister of Agriculture and his officials from Whitehall, or by the local authorities who were charged with the health of their people in their area.

He did not know how the Minister proposed to get the staff to carry out the inspections. Could he hope to get an army of sanitary inspectors before Germany was defeated or before demobilisation was in full flow? In the circumstances it would have a date many years ahead before the Act would operate.

Mr. Colegate, who seconded, said the question of reducing the powers of local government was extremely important and was arousing very great feeling among the large body of devoted men and women who gave a large amount of unpaid service in that sphere. These people were beginning to feel that their work was not appreciated. The Government had to make up its mind whether it wanted local government. If there was inefficiency measures should be taken to find a remedy. By the Bill the Minister was taking a thoroughly reactionary step which smacked a little of totalitarianism.

Mr. Creech Jones: The Labour Party would not support the amendment for a commission of enquiry when all the facts were known, nor vote against the Bill. But they asked that the Minister should give definite assurances so that the local authorities might feel greater confidence that the Government were not directing an attack which would deprive them of many of the functions they felt they ought to exercise, particularly in the field of public health.

Mr. Hudson said that he would give every consideration to the points that had been raised, and he hoped that in the Committee stage he would be able to relieve any anxieties. He had deliberately refrained from any attack on the administration of local authorities. He wanted to work in co-operation with them, and to do everything to get as good a Bill as they could.

Sir G. Courthope supported the Minister's proposals. Where the local authorities were efficient and the inspection was sound, the Minister should make the utmost effort to secure their friendly co-operation and that of their inspectors in making the transfer of powers. After the transfer the local authorities and their inspectors would still have duties to perform and authority to exercise over farm buildings, drainage and so on. It was of the utmost importance that tact should be used and that there should be no clash or cross-purposes between the inspectors of the Ministry and the local authorities. Efficient milk production did not depend on elaborate equipment.

Farmers' Support

Major York opposed the rejection. He did not think the Bill was in any way an attack on local authorities. The Bill was part of a scheme to improve the livestock and milk industry. The organised farmers of the country were backing the Bill. Support for the measure came also from Mr. Tree, speaking as a producer and retailer—"it was quite clear that over a very large area of England inadequate inspection was going on"—and Earl Winterton congratulated the Ministers of Agriculture and Health on their courage in bringing this Bill forward. There could be no question of the *amour propre* of the local authorities interfering with the scheme. The present system was one of utter confusion and inefficiency.

Centralisation Overdue

Mrs. Tate said it was more than high time that there was centralisation of the authority dealing with clean milk. It was a very patriotic act of the N.F.U. to give whole-hearted support to the Bill. Mr. Leslie suggested that the local authorities should be consulted in an endeavour to reach agreement before the House was committed to a Bill which would be resented by them.

Sir G. Elliston complained that the Bill made no mention of safeguards needed in order to get cleaner milk, and Mr. Lipson said that the quarrel with the Bill was that Mr. Hudson proposed to enter the domain of the local authorities. We were being taken still further on the road of bureaucracy, of undue control, and interference by the State in matters which were not strictly within their concern. Dr. Haden Guest expressed the view that if the local authorities had done their job there would have been no need for the Bill. The rejection would prolong the reign of dirty milk.

Sir E. Grigg declared his intention to vote against the Bill, which was a wrong approach to the question. Parliament was already overburdened and should not have placed upon it further detailed domestic administration.

Mr. Turton withdrew his motion so that the House could have a clear vote on the second reading.

* * * * *

Advisory Services for Agriculture

The House gave a cordial welcome on second reading to the Agriculture (Miscellaneous Provisions) Bill. In moving, the Minister said it contained two provisions of major importance to the agricultural industry—the establishment of advisory services and proposals regarding agricultural credit. Both these proposals, although of a long-term nature, were included in the Bill because the Government thought it very essential to provide for them in anticipation of the conclusion of the war in Europe.

The Luxmoore Committee had made two recommendations: (1) in favour of a unified advisory service and (2) that farm institutes should be placed under central control. The Government accepted the first recommendation, but they decided that, in spite of the very great administrative advantages that would flow from putting farm institutes under central control, it was desirable to integrate agricultural education with the general education of the country as a whole, and for that reason farm institutes should be under the control of the local education authorities.

It would be difficult to argue against the proposition that there should be a national advisory service for agriculture and that that service should be under the control of the Ministry of Agriculture, the cost being borne by the Exchequer. There was widespread agreement that our agriculture ought not to be allowed to sink back into the position it occupied after the last war. He hoped there was also agreement that measures should be taken to give some assurance of stability to the industry and that in return the country was entitled to expect a guarantee of reasonable efficiency in the industry. The experience of the last four years had convinced him that if the nation was to be asked for assistance there must be only one standard in agriculture—namely, the best.

No date had yet been fixed for the start of the new service. He hoped it would be very soon after the conclusion of the war in Europe. He was bringing the Bill in now so that time could be afforded for fixing the necessary provisions in detail. Under Clause 2 the Agricultural Mortgage Corporation would be enabled to lend up to £31,500,000 at an interest rate of 3¼ per cent.

A fact which emerged on consideration of the pig improvement clause of the Bill is that the Government do not intend to confine the measure to pedigree boars only. "I doubt if we dare, at this stage, license only pedigree boars or pedigree bulls," said Mr. Tom Williams, in winding up the debate.

General Eisenhower has notified exclusive London clubs which have given him membership that he will not be able to visit them until the war is over. But he finds time to visit his Scottish terrier that is in quarantine. The Scottie was his constant companion in Africa, but a quarantine is a quarantine in England and there should be no criticism because of that.—*N. Amer. Vet.*

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World-beating English Shorthorn.—Wintle Gentle 2nd, owned by Messrs. J. R. Burge and Son, Itchen Abbas, Winchester, has given 2,465 lb. of milk in 38 days in her 14th lactation, bringing her lifetime yield to 200,164½ lb. She thus becomes the world's first 200,000 lb. Dairy Shorthorn.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

May 30th.—**R.C.V.S. Council Election. Last day for receipt of voting papers.**

May 31st.—Meeting of the Society of Veterinary Practitioners at the Connaught Rooms, Kingsway, London, W.C.2, 2.15 p.m.

May 31st.—Meeting of the Derbyshire Veterinary Association, N.V.M.A., at the Midland Agricultural College, Sutton Bonington, 2 p.m.

May 31st.—Annual Meeting, West of Scotland Division, N.V.M.A., at the Glasgow Veterinary College, 2.30 p.m.

June 1st.—Meeting of the Central Veterinary Society, at the Conway Hall, W.C.1, 2 p.m.

June 2nd.—Meeting of South Wales Division, N.V.M.A., at the Castle Hotel, Neath, 2.30 p.m.

June 6th.—**R.C.V.S. Annual General Meeting**, 10, Red Lion Square, London, W.C.1, 11.30 a.m.

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Sterility Advisory Service

The Ministry of Agriculture and Fisheries has appointed a number of Sterility Advisory Officers on the staff of its Veterinary Laboratory. These officers have specialised in the study of sterility problems as they affect farm livestock, and one of their functions is to assist practitioners by means of consultation on sterility problems when requested to do so. A number of these officers are now in post at various centres as shown below; it is hoped to make further appointments.

Centre, Name of Officer and Address

Eastern Counties—F. T. Day, M.R.C.V.S., J. A. Laing, PH.D., B.SC., M.R.C.V.S., c/o The School of Agriculture, University of Cambridge.

North Wales—D. L. Stewart, M.R.C.V.S., c/o The Llysfasi Farm Institute, Ruthin, Denbighshire.

Southern Counties—D. N. Spriggs, B.SC., M.R.C.V.S., c/o University of Reading, 7, Redlands Road, Reading.

South-Eastern Counties—P. G. Millar, M.R.C.V.S., c/o The Veterinary Laboratory, Ministry of Agriculture and Fisheries, New Haw, Weybridge.

Midlands—W. F. Davison, M.R.C.V.S., c/o Midland Agricultural College, Sutton Bonington, Loughborough.

Western Counties—I. G. Shaw, B.V.SC., M.R.C.V.S., c/o Harper Adams Agricultural College, Newport, Salop.

Northern Counties—P. D. Thomson, M.R.C.V.S., 10, Pannal Ash Drive, Harrogate.

South-Western Counties—D. M. Thomson, M.R.C.V.S., c/o Dartington Hall Trustees, Totnes, Devon.

In addition to the above, other officers are now undergoing training: their stations will be decided later.

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PERSONAL

Appointments.—Mr. Campbell Dickson, M.R.C.V.S., has been appointed Veterinary Surgeon to the Government of Southern Rhodesia in the Department of Agriculture and Lands at Salisbury. He qualified at the Royal (Dick) Veterinary College in 1935, and since then has been in practice at Romford, Essex.

It is confirmed that Dr. Alexander Robertson, M.A., B.SC. (ABER.), PH.D., M.R.C.V.S., was appointed to the chair of the Animal Husbandry Department of the Royal (Dick) Veterinary College and took up the duties on February 1st, 1944. He graduated at the Royal (Dick) Veterinary College on July 20th, 1934, and entered the service of the College on May 6th, 1937, as Lecturer in the Physiology Department. In the Animal Husbandry Department he is to be assisted by Mr. James S. S. Inglis, who was recently appointed Senior Lecturer in that Department. Mr. Inglis graduated at the Royal (Dick) Veterinary College on July 20th, 1933, and previously held the degree of B.Sc. in Agriculture conferred by the University of Edinburgh. Both have had life-long experience of farm livestock.

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Births.—BARNARD.—On May 5th, 1944, at 5, Estcourt Street, Devizes, to Barbara, wife of G. M. Barnard, M.R.C.V.S., a daughter (Ruth Margaret).

OGILVIE.—On May 17th, 1944, at Ashton-on-Mersey Nursing Home, Sale, Cheshire, to Dorothea, wife of D. D. Ogilvie, B.SC., M.R.C.V.S., a sister for David.

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Firing Practice Accident.—We regret to learn that Major M. R. MacFarlane, M.R.C.V.S., of Spalding, Lincs., officer commanding Spalding headquarters company, 2nd Holland Battalion Home Guard, received severe injuries to the head during the firing of a gun at a company weapon-firing practice on the Fosdyke outmarshes.

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Marriage.—MACLAY—WEDDELL.—On May 8th, 1944, at the Grosvenor, Glasgow, Captain Ian Macdougall Maclay, R.C., third son of Mr. and Mrs. Kenneth Maclay, 23, Whittingehame Drive, Glasgow, and Mary Houston Weddell, M.R.C.V.S., younger daughter of Mr. and Mrs. James W. Weddell, Coolthead, Bearsden, Dumbartonshire.

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R.C.V.S. OBITUARY

As we go to press, we learn with much regret that Dr. A. W. Whitehouse, M.A., Principal of the Glasgow Veterinary College, died on Tuesday last, May 23rd. A memoir will appear in our next issue.

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Colonel William Albert Wood, C.B.E., M.A., M.R.C.V.S.

Many members of the profession will be grieved to learn of the death of Colonel W. A. Wood. Although he had been in failing health for some time he died rather suddenly at the age of 72 at his home in Pakenham, Suffolk.

Colonel Wood was born at Saul, Norfolk, in 1872, and came of farming stock. He was educated at Epsom College and afterwards entered the Royal Veterinary College, where he qualified in 1894. He immediately joined the Army and during his 25 years' service in the Royal Veterinary Corps he was in India for many years, in British Somaliland during the war with the Mullah and for five years in Ireland. During the Great War he was with the Lahore Division in France from 1914-16 and then went with them to Mesopotamia, where he was in charge of the Veterinary Hospitals. For his services there he was mentioned in dispatches and awarded the C.B.E.

He went to Cambridge in 1920 and joined the staff of the School of Agriculture, where his brother was Drapers Professor, and during those early years he worked hard for the establishment of a veterinary centre. He became M.A. of Caius College and when the Institute of Animal Pathology was founded he was appointed Parasitologist. His vigorous personality and unfailing helpfulness rapidly became known to an ever widening circle and his advice was constantly sought and highly valued. His vivid sense of humour made his instruction and advice as entertaining as it was sound.

Colonel Wood was an active member of the N.V.M.A. and acted as local Secretary for the Congress held in Cambridge in 1925. The following year he was President of the Eastern Counties Division and served as their Secretary from 1925-32.

After his retirement from Cambridge in 1936 he started in practice and also acted for the Royal College of Veterinary Surgeons as Examiner in Animal Management. At the beginning of the war he took over the Directorship of the Veterinary Research Laboratories at Pakenham and remained in charge until his death.

Colonel Wood was a great sportsman. He won the Punjab Army Cup in 1899 with "Ruddigore" and played for the Army Polo team in India. He was excellent at all outdoor pursuits, but during later life he found his recreation principally in gardening. The roses which he grew in his garden in Cambridge were a delight to his many friends, and those which he planted and carefully tended in front of the Institute of Animal Pathology will for years remind those who knew him of his charming personality.

Colonel Wood married Miss Hettie Marks, and to her, his son and two daughters, heartfelt sympathy is extended in their sad bereavement.

F. B.

The Funeral

The funeral took place at Pakenham Church on Tuesday, May 9th, and the profession was represented by Messrs. R. R. Willing (Ministry of Agriculture), G. A. Hudson, H. Mitton, and M. O. J. McCarthy, G. D. Shearer and F. Blakemore (Institute of Animal Pathology).

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R.C.V.S. ANIMAL MANAGEMENT EXAMINATION

LIST OF SUCCESSFUL CANDIDATES

LONDON:

Benham, Miss C.
Bennett, P. M.
Betty, R. W.
Boyden, S. V.
Burdett, R. G.
Carr, R. J.
Curwen, Miss P.
Elsworthy, Miss R.
Frappell, J. P.
Gray, J. E. (credit).
Greenough, P. R.
Harris, D. G.
Hart, C. B.
Hobbs, D. O. (credit).
Hodgson, A. J.
Hoffe, I. A.
Lewis, M. R. W.
Penhale, Miss B. M. (credit).
Stower, J.
Sumner, G. R.
Szilard, G. A.
Warren, A. L.
Warren, W.
Watson, R. T. (credit).
White, Miss C. M. (credit).
Williams, G.

LIVERPOOL:

Barker, I. R.	Holmes, J. R.
Carus, A.	Lee, Miss P. (credit).
Curtis, P. E.	Llewellyn, D. G.
Davies, E. T.	Murch, O.
Fletcher, J. T.	Shepherd, E.
Haigh, B.	Scarisbrick, R.
Henderson, Miss J. E.	Walley, J. K.
Hignett, P. G. (credit).	

EDINBURGH:

Andrew, H.	Murray, D. I.
Bowman, J. G. W.	Noble, C.
Colebrook, F.	Price, E. L.
Ellis, P. R.	Renton, C. P.
Henderson, G. L. B.	Thomas, P.
Kerr, W. J. (credit).	Wilson, W. J. (credit).
Munro, I. B.	

(To be continued)

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Further Progress in Penicillin Treatment

The whole of the space devoted to original articles in the *British Medical Journal* (April 15th) is occupied with papers giving the results of treatment carried out at several centres through the Penicillin Trials Committee of the Medical Research Council. The therapeutic properties of penicillin were first disclosed in 1940, it will be recalled, by the Oxford group of workers, Florey and his colleagues, who in papers reporting preliminary trials with the drug up to 1943 showed, firstly, that given systemically it will control septicaemia or other extensive and dangerous infections due to *Staph. aureus*, and, secondly, that applied locally it is the perfect antiseptic when circumstances permit its continuous action. Not only staphylococcal infections, but infections caused by haemolytic streptococci and pneumococci were found to be even more amenable to penicillin treatment, but these were left alone because they are relatively easily controllable by sulphonamide treatment, which, however, has very little real power over staphylococcal infections. Subsequently, the work was taken up elsewhere, particularly in the United States of America, where steps were taken to increase enormously the very limited supplies that had been available until then for trial. Several further specific uses for penicillin were described by British workers, including the treatment of burns, of septic infections of the hands—where it seems that a small amount of penicillin will go a long way in preserving function and restoring it rapidly—and the treatment of battle wounds. In America, a preliminary report has aleady been published on a much larger group, namely 500 cases, many of which received systemic treatment, and it is there that the treatment of both gonorrhoea and syphilis has been developed.

When supplies from commercial sources in England had reached sufficient proportions the trials were undertaken at the centres from which the reports are now forthcoming. In outlining their policy, the writers refer to the transition from an all-embracing enthusiasm to caution in selecting cases with particular ends clearly in view, which is inevitable when supplies are limited. There is still not nearly enough penicillin available for treating all the human cases even of a few conditions, such as staphylococcal septicaemia, in which the value of heavy systemic dosage is fully established. "Since the purpose of the work was to break new ground rather than to exploit existing knowledge, such cases had often to be refused." The warning is given that even penicillin is no guarantee of cure in staphylococcal septicaemia. Apart from several cases of osteomyelitis in this series with a positive blood culture, all of which did well, there were four cases of septicaemia in which two patients died in spite of heavy and long-sustained dosage. The opportunity afforded by these and other cases undergoing systemic treatment was taken to study new methods of administration. The disadvantages of the continuous intravenous drip method were difficulty of accurate regulation, liability to thrombosis, and sometimes shortage of veins. The disadvantage of three-hourly intramuscular injections, as later recommended by Florey, was the ordeal for the patient, who must submit to painful injections continued with inexorable regularity by night as well as by day for perhaps more than a week. The merits of both routes seem to be combined in the intramuscular drip afterwards evolved by one group of workers, who also explored the possibilities of infusion *via* the bone marrow. At their centre, the treatment of acute osteomyelitis by the systemic route had the almost uniformly favourable results already reported. Early treatment appears to be essential, the least satisfactory case being one in which it was resorted to a full month after the onset. The account of attempts to treat chronic bone infections, whether haematogenous or due to compound fractures, and whether by local application in various forms or even by the systemic route makes very different reading. It is indeed, continues the editorial notice, a record largely of failure, and surgeons and others, it is said, who are clamouring for penicillin in order to treat cases of this kind may console themselves with this evidence that their deprivation may not be the misfortune they think. Penicillin, it is maintained, is not a magic elixir the mere instillation of which into a sinus or bone cavity will lead to healing. It can only deal with bacteria which it can reach, and it cannot remove dead or irreparably damaged tissue. Thus, in experience of one of the workers who specialised in the treatment of osteomyelitis of the mandible, the practice was to remove all the affected bone, leaving perhaps only a thin lingual plate to maintain continuity. It was formerly necessary to leave the wound open and allow it to granulate. This worker now closes it completely, having inserted two tubes through which the bone cavity can be filled with penicillin solution from above; infection is thus suppressed and rapid healing is secured. This, it is claimed, is a new application of the principle first enunciated by the Floreys, with the new mastoid technique as their example, that septic wounds which are to be treated with penicillin must be sewn up in order to retain the solution. The success of the operation is clearly the effect of radical removal of affected bone, and perhaps nothing short of this will provide the answer to chronic osteomyelitis in other parts of the skeleton. The mandible has two advantages from this point of view: it is easily accessible and non-weight bearing. Corresponding treatment of some of the long bones may well be surgically impossible.

Much of the work recorded deals wholly or in part with various affections of the soft tissues. Treatment of staphylococcal breast abscess was begun by one of the workers, and it seems that aspiration of pus and injection of penicillin solution will sometimes replace operation, and usually hasten recovery. It has yet to be decided whether, as is hinted elsewhere in connection with empyaema, it may prove better policy to evacuate the contents of the abscess surgically and rely on penicillin to achieve and maintain subsequent sterility. Several useful points in connection with the use of penicillin in plastic surgery are brought out by two of the workers: it has evidently several uses here, as would be expected from the damaging part which pyogenic infection can play, and the usual full accessibility of the infection to treatment. The treatment of 75 cases of various diseases of the skin is described by three workers. This is almost a new field, it is said, and evidently a promising one, at least in so far as the condition treated is due to infection by staphylococci or streptococci. That impetigo should be curable is no new thing, but penicillin seems to achieve this effect more quickly than anything else. That sycosis (*i.e.*, inflammation of the hair follicles with formation of papules or pustules) should be quickly controlled is decidedly something new, and this achievement, it is said, should longer experience confirm it, will rank high among the minor benefits of the discovery of penicillin.

Garrod gives an account of the extensive laboratory work entailed by fully controlled penicillin treatment. "The necessity for this will give pause to those who look forward to the wider availability of penicillin, since laboratory service on this scale is not everywhere available; but perhaps greater experience and more standardised methods of treatment will dispense with the need for at least some of this work." New observations reported are the variable sensitivity to penicillin of *Actinomyces*, with corresponding variations in the effects of treating several cases, and the susceptibility to penicillin of mouth bacteria generally, again reflected in the good results in osteomyelitis of the jaw.

The general principles of penicillin treatment, it is believed, are now understood, but specific new applications continue to be discovered. This is not merely a matter, it is added, of thinking of something new to treat: it may involve devising a new method of application or a change of surgical technique to suit the altered circumstances created by penicillin. And, finally, it is held that there is still room for enterprise, notably in special departments of surgery which so far have had little chance to try their hand with the new weapon.

Two things stand out clearly to the veterinary reader from the above summary which we have taken the liberty to reproduce fairly fully from our medical contemporary: firstly, it is unlikely that penicillin will become available in sufficient quantities for some time yet for more than strictly limited trial in veterinary practice; secondly, in the meantime, pending the availability of plentiful supplies, much is to be learned from the carefully planned and recorded work in the medical field upon the uses and limitations of penicillin treatment. That penicillin itself or some variant of it will become available some day for use in animal practice seems almost assured. That conditions are plentiful in which it can be properly tried with high promise of success is undeniable. We have the recent experience to guide us of the mutual advantage of animal experiment and well conducted trials on human patients in the case of the sulphonamide group of drugs. There, however, once the chemical configuration of the group became known, exploitation of the uses of variants within the group and large-scale manufacture and issue by commercial chemists were relatively easy. It may not be altogether a disadvantage that the preliminary difficulties of preparing penicillin on a large scale have precluded its general use until some precision was obtained regarding the

mode of action from carefully controlled trials. For otherwise, a too ready belief in its universal applicability from a few surprisingly good results in ordinary practice might eventually have brought upon it undeserved discredit. It is evident that the field of chemotherapeutic research is one in which great energy is now being displayed, and no veterinarian can afford to ignore the real progress that is being made within it. J. T. E.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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THE ELECTIONS AND THE LOVEDAY REPORT

Sir,—I was not insensitive to the high compliment paid to me by Mr. Bevan, in requesting me to stand for election in the forthcoming R.C.V.S. elections, especially as this request came from one of his long and fine record of distinguished achievement in veterinary science. I felt regretfully bound, however, to adhere to my decision not to seek nomination. During the anticipated serious assault upon the integrity of the profession, and having in mind the example of William Hunting, I thought I would be at liberty to render greater service to the profession outside the Council R.C.V.S., constituted as that particular body is primarily, by Charter and Statute, as a judicial authority and not as a political organisation. To guard the hard-won privileges of that citadel, therefore, against intruders from without, and the few misguided ones within, I hope to continue my stand outside its ramparts. That will be within the Council of the N.V.M.A., so long as it pleases one of the Divisions to elect me as one of its representatives. I have already asked some of the Divisions to lend me their support at the special meeting of Council which may need to be called in compliance with the terms of the Great Yarmouth resolution of 1939, to which I at once drew the attention of the President (April 29th, 1944). I believe the Divisions will not fail to reaffirm the resolutions which almost of one accord they submitted after the unfortunate decision of Council on June 16th, 1943, subsequently amended by a large majority at the annual general meeting, September 30th, 1943.

The overriding question now confronting the profession is, will the recommendations as revised in this second report of the Loveday Committee tend to destroy what we recognise as the professional standing of those who already hold or are to be given certificates of competence in the veterinary art and science?

When one proceeds to study with, as Mr. Bevan calls it, "fearful intensity," the long and peculiar history of the veterinary art, chequered and despised as it often turns out to be, in some ages and in some territories, one finds that it is ever capable of resurgence when, with the goodwill of the State, its practitioners are allowed to manage their own affairs and conduct the tests for fitness to enter their own community. It is then that the art is seen to be held in high and popular esteem and to be of immense benefit to the public.

My own answer to the above question and its subsidiaries is, therefore, perfectly clear, and I do not think it will differ materially from those that will soon be forthcoming from the great mass of those engaged in our profession who have toiled at the daily work for which the British public ordinarily makes demands on the services of veterinary surgeons. I recognise that in rendering these services direct to the public these men and women of the profession are far better fitted than I am to give an appropriate and decisive answer. Therefore, let them not falter in giving it.

Yours faithfully,

The Yews, Byfleet. J. T. Edwards.

May 15th, 1944.

. . . . .

Sir,—Recent experience shows me that there are apparently members of the Royal College who, after reading the recommendations contained in the Second Report of the Loveday Committee on Veterinary Education, have come to the conclusion that, if the steps recommended are adopted, they may be found to be not inconsistent with the maintenance of the uni-portal system.

Such conclusions, which are so far removed from fact, must be due to statements contained in the report as:—

"*The Committee regard it as essential that the R.C.V.S. should remain the governing body of the profession,*" and further on:—

"*Membership of the R.C.V.S. would remain the sole means of entry to the profession.*"

In the same way it could be argued that no matter how many ways there are in which recognised medical diplomas and degrees can be obtained, as the holders of these cannot practise until they have been registered by the General Medical Council in the manner which enables the holders of such qualifications to take the title of "registered medical practitioner," therefore, the medical profession in fact enjoys all the blessings of a uni-portal system.

The truth is that when the medical or veterinary student passes his final examination he holds only an academic qualification, and the only way for him to obtain the legal qualification to practise is by securing registration.

Whether there is, in actual fact, a uni- or multi-portal entrance to the profession is decided by ascertaining whether or not the one governing, examining and registering body has the sole right to examine and say who is, and who is not, fit to hold the academic qualification entitling the holder to registration.

This is the case in the veterinary profession to-day, and it therefore possesses a uni-portal system of entry.

As is well known, no such single and uniform system exists in the medical profession, and many varying and differing medical degrees and diplomas entitle the holders of these academic qualifications to registration by the General Medical Council, so that the profession consequently possesses a multi-portal system of entry.

The vital statement in the Loveday Report is: ". . . the Council of the R.C.V.S. should be required to place upon the Register of members of the College the names of all graduates of universities authorised by the Privy Council to confer degrees which are registrable qualifications."

The day such takes effect, without any doubt whatever, marks the end of the uni-portal system of entry into the veterinary profession of this country.

Yours faithfully,

23, Queen's Gate Gardens, Thomas Lishman.
London, S.W.7.
May 13th, 1944.

. . . . .

Sir,—One cannot but admire the singleness of mind of those who are fighting so courageously for the right of the profession to paddle aimlessly round in a backwater. Those who have hitherto expressed their views to you on the Loveday Report appear to be totally divorced from reality—or at least to have obtained a decree nisi. It is the fashion in this Centenary year of the R.C.V.S. to congratulate ourselves on the magnificent achievements of the profession in this time. Granted that much has been accomplished—is a loss of £30,000,000 a year from preventable diseases of livestock a matter for self-congratulation? It seems to me it is rather a call to re-dedication on a wider basis—a basis which may be given us if we are prepared to elect to our service those whose minds are not closed to all progress and can recognise "the opportunity in the difficulty, not only the difficulty in the opportunity." I yield to no one in my conviction of the vital importance for the profession of the retention of the one portal, but am convinced that the Loveday Committee has produced recommendations which, given good sense on both sides, will ensure that a strong and progressive Council, R.C.V.S., can maintain control of the profession while at the same time giving us the advantages of a less egocentric education. Integration with a university would, one hopes, raise the standard of teaching by ensuring that teachers received at least an elementary training in the art and science of teaching before taking up appointments. There is to my mind only one point which requires further clarification and firm handling—the exact meaning of "registrable degree" and of who is to decide what is a registrable degree.

The issue is, of course, largely a political one; a veterinary student was recently quoted to me as concluding a political argument by saying "What do we care about politics anyway: we're going to be veterinary surgeons." This attitude is too common even among those of us entitled to vote. It is by no means rare to find no book of any kind in a veterinary surgeon's house, let alone any exposition of current thought—or what is perhaps more important in England, of current feeling. It is not possible to keep up with affairs by a casual perusal of the daily Press. It cannot be too often emphasised that this country is on the verge of great changes—the Conservative Party itself stands far further to the Left than did the Liberal Party of Mr. Asquith. If we do not realise this, we shall remain the Cinderella of the professions, which is apparently what some members want. A house divided against itself will fall; one section of the profession is determined to stand against the stream of progress; it must not be allowed to do so.

Yours faithfully,

Chipping Norton, Oxon. Paul Crosfield.

May 14th, 1944.

. . . . .

Sir,—As a signatory to the Loveday Reports and as an active member of the veterinary profession jealous for its progress and for its rightful influence within the community, I feel it my duty, in view of various misunderstandings that some are striving to engender concerning the Committee's Second Report, to make the following statements:—

1. The Report does not recommend the abolition of the one-portal system of entry into the profession. Membership of the R.C.V.S. remains the sole licence to practise. The Council, R.C.V.S., remains the body concerned with maintaining a minimum standard of *all* examinations, University as well as College.

2. The recommended modifications to the present system are made in order to secure to the profession the maximum benefits from both the higher education and research organisation of the country without losing professional control. The Council, R.C.V.S., remains the supreme professional body over its own affairs and no new General Veterinary Council is recommended.

3. Under the present system the R.C.V.S. sets the annual examinations but has no other powers or control over the independent teaching institutions.

4. Under the new recommendations the Council, R.C.V.S., will be given powers to ensure both a minimum standard of all examinations *and* a minimum standard of instruction.

5. The new Council, R.C.V.S., would have an enhanced status, with advisory powers to the Privy Council and supervision over colleges and universities engaged in veterinary instruction.

6. Many other of the recommendations contained in the Report, including that of generous expenditure, are obviously to the advantage of the profession.

May I exhort members of the profession not to be unduly influenced by the isolated quotation of a single sentence or recommendation, but to consider the recommendations of the Report as a whole. At this juncture, surely, the implications, advantages and drawbacks that might seem to arise from the Committee's recommendations should be thoroughly considered by R.C.V.S. Council, alone and in consultation with other bodies concerned. May I venture to suggest that we need councillors with this good intent, not those who have already irrevocably made up their minds and are unwilling to consider any modification of the present conditions no matter what opportunities may thereby be offered to the profession? Where would the profession be to-day if our colleagues of 100 years ago had—ostrich-like—stuck their heads into the sands of the past and refused to look to the horizons of the future?

Yours faithfully,

Bentley Hyde, Priory Drive, W. R. Wooldridge.
Stanmore, Middlesex.
May 22nd, 1944.

Sir,—As one who signed both reports of the "Loveday" Committee, I am more than perturbed that the second report is being made, by some, the principal issue at the forthcoming election for the Council.

I have no desire, in this letter, to force my own opinions upon anyone; I do not write to endeavour to convert those who may hold contrary views. I do, however, wish to express the hope that members of the profession will pause awhile, read and think over the report and discuss it with others, before expressing an opinion, or voting for a member to sit upon the Council, simply because he is in favour of, or rejects, it at such a short interval after its publication.

I had looked to members discussing the report at branch meetings of the Association; perhaps, finally, at an *ad hoc* meeting, so that, whatever the verdict, it could truthfully be said to represent the considered view of the whole profession.

Of the Committee, four members are outside the profession; each of eminence in his own sphere. At much personal inconvenience they have devoted many months to consideration of views put before them. If the results of that consideration are to be rejected immediately, without careful and organised discussion, it will be something more than a discourteous action; I can say, without any doubt, that these men have honestly and urgently tried further to help our training, usefulness and status. Such an action may lead those who wish to assist us, and are in a position to do so, to give our cause less favourable consideration than might otherwise be the case.

It is suggested that all that can, and should, be asked of candidates in the forthcoming election is that they will give serious consideration to the report both within and outside the Council. They would then be in a better position to decide what is best for the profession and its future.

Yours faithfully,

High Drive House, Woldingham, Surrey. J. Smith.
May 22nd, 1944.

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CONTROL OF MILK PRODUCTION

Sir,—The proposal to transfer to the Ministry of Agriculture and Fisheries powers to control the production of milk is long overdue and I do urge the profession to support the Ministry against the opposition which is bound to arise in quarters with little or no knowledge of milk, and who, in this district at any rate, ignore the role which is the perquisite of the profession.

Here, in common with many others, I am forced under the rationalisation scheme of the Ministry of Food to purchase non-designated milk, and as no facilities for cooling exist on the premises where it is produced, it is still hot on delivery. This despite the fact that the designated milk which we used to have still passes our doors. Requests to purchase designated milk are ignored, and even members of the medical profession decline to give certificates in cases where children are resident.

Within a few miles there is a herd rotten with abortion, and cases of undulant fever have occurred in children. Apparently, on the admission of the County Medical Officer, no powers exist either to prohibit the sale of the milk or to enforce its heat treatment.

Private milk retailing should be abolished, the producer being paid according to the standard he has for sale: all milk to be sent to distributing centres and two brands sold to the public, namely, T.T. and pasteurised.

The Ministry of Agriculture is the one Ministry cognisant of livestock and its products, and the only one which appreciates the value of, and will utilise, the services of the profession.

The absurd penalty imposed on the progressive owner who had obtained a T.T. licence, if he wished to resort to vaccination against abortion, should be fresh in the memory of all of us.

A weekly feature at the local market is a collection of emaciated cattle sent in by one dealer. No action can be taken unless it is possible to certify (*a*) that the condition is due to disease, or (*b*) that it is an act of cruelty to transport and so expose for sale. By no stretch of the imagination can the meat from such lean kine of Pharaoh be fit for human consumption. If the Ministry of Agriculture in time has control over livestock and its products, no doubt then I shall have the power to order the removal of such cattle to their only fit destination, namely, the knacker's yard.

Yours faithfully,

"Rothiemurchus," J. F. D. Tutt.
St. Cross, Winchester.

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ARTIFICIAL INSEMINATION AND THE PRACTITIONER

Sir,—I have always contended that artificial insemination should be left to the general practitioner, particularly those who are having wide experience of running the survey scheme, and a recent experience of mine—which may be duplicated all over the country—seems to uphold my contention.

A client had three cows "running over" to artificial insemination after four attempts and as he was in the survey scheme asked my advice.

On examination all of the said animals were suffering from "whites" and two of them from chronic endometritis. After treatment all of these animals are now in calf to the "artificial bull." The inseminators take the credit!

Now if this operation were performed by the general practitioner there would have been no need for this waste of public funds and above all no need for this time lag.

Of course, as with tuberculin testing, I can foresee the possibility that before long the survey scheme work will be taken on by the Ministry and worked conjointly with the artificial insemination and the general practitioner done out of another job.

Yours faithfully,

Wissett Place, Bungay Road, A. M. McDonald.
Halesworth, Suffolk.
May 5th, 1944.

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THE CALFHOOD VACCINATION SCHEME

Sir,—I read with interest Mr. J. P. Pickering's letter on the above in your issue of May 13th. With the general tenor of it I agree, but I should deem it a favour if he would state clearly on what evidence he considers that the vaccine will be effective. I consider that many members of the veterinary profession even now desire to know the reason for believing that calf vaccination will be effective and on what evidence the favourable conclusions are based.

Yours faithfully,

Bolton. G. Mayall.
May 15th, 1944.

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R.C.V.S. COUNCIL ELECTION ADDRESS

To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—I believe that changes in veterinary education are necessary and essential and, on careful consideration of the Second Loveday Report, believe the recommendations made to be in the true interests of the future of the profession.

Southampton. Geo. N. Gould.
May, 1944.